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PORT OF SYDNEY

—N.S.W.—

SYDNEY HARBOUR TRUST
BIRDS EYE VIEW of
the PORT of SYDNEY

OFFICIAL HANDBOOK

THE PORT OF SYDNEY

N.S.W.

PUBLISHED BY
THE SYDNEY HARBOUR TRUST COMMISSIONERS.

1919

The Sydney Harbour Trust.

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THE PORT OF SYDNEY.

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Entrance to the Port of Sydney.

The Port of Sydney.

Foundation and Development.

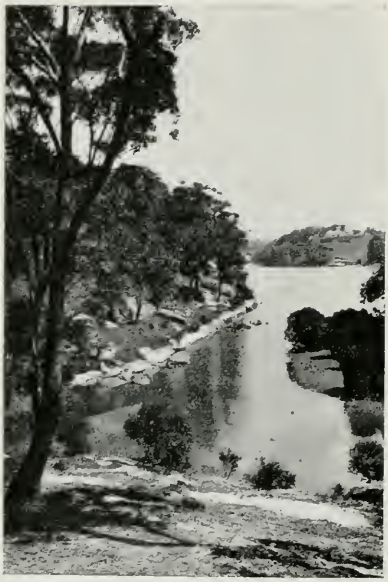
Captain Phillip's "Sirius."

WHEN Captain Cook, sailing from Botany Bay northwards, noticed the "small inlet," to which he gave the name of Port Jackson, he little dreamt that beyond the rugged, bluff headlands which marked the entrance lay "one of the finest and most beautiful harbours in the world," and he did not live to realise what an opportunity had been lost.

He had, but a few days before, unfurled the British flag at Botany Bay, enriching the Empire with a continent, and presumably he was well satisfied. Captain Cook found Botany Bay a delectable place. Its magnificent expanse of water impressed him; besides which there were "the fine meadows, the abundance of grass and the deep, black mould, fit for the production of any kind of grain," which he believed to be characteristic of the country round about, and with a description of which he touched the imagination of his countrymen on his return to England. So he gave the inlet the prosaic name of Jackson, in honour of the then Secretary to the Admiralty, and kept his course northward.

Governor Phillip's Discovery.

It was not until eighteen years later, when Great Britain began her tardy colonisation of Australia, that Captain Phillip, who had been appointed Governor and Captain-General of New South Wales, made amends for the slight which the great navigator had unconsciously put upon Port Jackson. On the 18th January, 1788, Governor Phillip reached Botany Bay with the first fleet, comprising eleven vessels: the "Sirius," a frigate of 450 tons with twenty guns; the tender ship "Supply"; six transports and three store ships; and a human freight numbering all told 1,100 persons.



As Nature left it.

Governor Phillip did not see Botany Bay in the light in which it appeared to Captain Cook. He was frankly disappointed. He found that the bay afforded no shelter from easterly winds, that its waters were shallow, that there was but a scanty supply of fresh water, and he feared that "the dampness of the soil might render the people unhealthy." He looked in vain for the fine meadows, the abundant pastures, and the rich black mould which Captain Cook had so graphically described.

Without loss of time Governor Phillip set out to seek a more favourable situation for his settlement. On the 22nd January he left with a small party in rowing boats, and early in the afternoon of the same day entered Port Jackson, thirteen miles distant.

"Here," in the words of the chronicler of the time, "all regret arising from their former disappointment was at once obliterated, and Governor Phillip had the satisfaction to find one of the finest harbours in the world, in which a thousand sail of the line might ride in perfect security."

Many tides have risen and fallen since the first fleet, whose eleven vessels did not aggregate more than 3,800 tons, dropped anchor in Sydney Cove. The little hamlet of 130 years ago has grown into a city of 800,000 inhabitants, covering an area of 148 square miles: it has spread civilisation over a continent nearly as large as Europe; and though the original territory of New South Wales has been subdivided into several States, Sydney remains the chief port of Australia, and capital of a State two-and-a-half times the size of Great Britain and Ireland, whose ever-increasing trade is conducted by steamers of as much as thirty times the tonnage of the largest of Governor Phillip's ships.

While it might crowd the harbour somewhat if a thousand modern "sail of the line" were to pay Sydney a surprise visit there is no gainsaying that as regards safety and beauty Governor Phillip's appreciation is as applicable to-day as when it was uttered.

Port Jackson ranks as a natural harbour in the complete sense of the word. The entrance, which lies between bluff

Double Bay.

Mosman Bay.

headlands, is nearly a mile in width and clear of danger; its waters are deep; its steep foreshores provide good shelter for vessels at anchor; it is well lighted, and ships of the heaviest draught can manœuvre in it with ease and safety.

An Extensive Coastline.

For thirteen miles as the crow flies Sydney Harbour extends inland, but the foreshore on either hand is broken into so many bays and coves that it possesses a total coastline of no less than 188 miles.

Balmoral Beach, Sydney Harbour.

It is to the multiplicity and variety of its bays and promontories that the harbour is indebted for most of its charm, as well as for much of its value to shipping, by forming sheltered areas amounting to natural docks in which lighters and other attendants on large ships can operate in comfort at all times.

The foreshores between the city and the sea have, with the exception of Woolloomooloo Bay, been preserved from encroachments on the part of industrial or commercial enterprise. Where they are not actually reserved for public recreation they are devoted to residential purposes, with mansions and villa residences domi-

H.M.A.S. "Australia" in Farm Cove.

Taronga Park Zoological Gardens.

nating the heights and lining the water front, and the facilities afforded for private sea baths and boat-houses are perhaps unique in the world. The beauty spot most contiguous to the city is Farm Cove, where may be usually seen at anchor warships of our own or of some other nation, and the Botanic Gardens, which extend to its encircling shore, are a never ceasing source of enjoyment and recreation to city dwellers.

On the northern shore of the harbour the most noted point of interest is Taronga Park Zoological Gardens, on the slopes and amongst the rocks of which the animals are housed without bars, and under conditions approximating as nearly as possible to the natural. But the beauty does not end where the city begins; the scenery of the upper reaches is not surpassed by anything to be seen elsewhere.

Sydney's Venetian Highway.

The bays in which the shipping trade of the port is transacted are in intimate touch with the heart of the metropolis, and the main streets of the city begin at the water front. Hence it is that the harbour plays so prominent a part in the life of the community. Not merely is it the highway of the country's commerce, in which connection close upon 10,000 vessels enter and leave it in the course of a year, but it is also the main thoroughfare of Greater Sydney itself. Fleets of ferry steamers, radiating from the city's centre to the distant suburbs, carry close upon 37,000,000 passengers yearly between the northern and southern shores. Practically half the population uses the harbour in the course of business; the other half takes its pleasure and recreation on and about its waters.

Picturesque Islands.

In addition to the public reserves along the foreshores there are in the harbour itself a succession of islets, some of which, retaining their natural verdure, are maintained by the Harbour Trust as pleasure resorts. Shark Island lies midway between Bradley's Head and Rose Bay, Clarke Island breaks

Man-o'-War Steps, Farm Cove—Part of Australian Fleet at Anchor.

the great stretch of water between Double Bay and Mosman, Garden Island and Fort Denison play a similar role between Rushcutter's Bay and Neutral Bay. Higher up stream are to be found Goat Island, Spectacle Island and Cockatoo Island, the latter being used by the Commonwealth for building and repairing war vessels.

Shark Island and Light Tower.

The Lights of Sydney.

Pleasing to the eye as Sydney Harbour is by day, at night, when the lights of the metropolis encircle it and brilliantly illuminated ferries flit to and fro, it is to be seen in another aspect that has a charm of its own.

The emotions of a visitor entering Sydney Harbour by night are set forth by the author of "The Real Australia."

> "Whatever you have read," he writes, "and whatever you have dreamed of Eastern cities by the Tigris; whatever you have seen of limelight effects on a brilliant, gaily coloured, thronged and

Fort Denison.

animated stage; whatever you have pictured to yourself of islands and gardens and palaces by the water's edge—all of these and more are around you and in front of you as the ship winds past promontory after promontory, island after island, on its passage towards a mooring place in Sydney Harbour. The panorama has an unreal and fairylike splendour. For a minute or two, perhaps for half an hour, you expect that everything will presently dissolve and the conditions of blackness and vacancy reassert themselves. But the boat passes on and the picture remains. You realise after a while that it is the city itself welcoming you, beckoning you, smiling at you, with all its arcs and crescents and its glittering phantasmagoria of lights."

Bradley's Head Light.

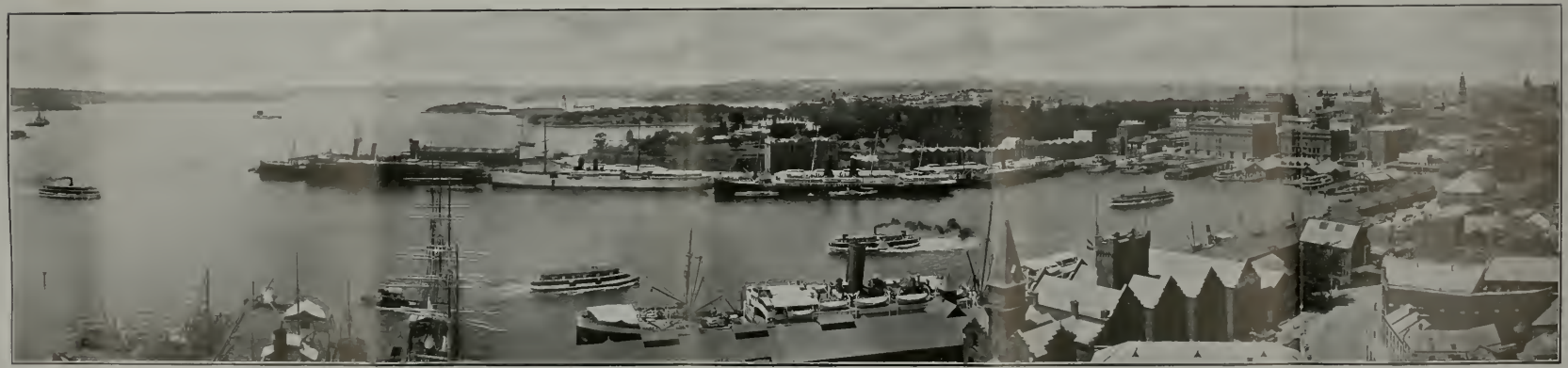
GROWTH OF THE PORT.

Sydney Cove.

In selecting Sydney Cove, four miles from the Heads, as the site for the new colony, Governor Phillip was influenced by the fact that it had the best spring of fresh water, that ships could anchor close to the shore, and that at very small expense quays might be constructed "at which the largest vessels might unload." He named the cove after Lord Sydney, then Secretary of State for the Colonies. Within four days of his discovery, that is to say, on the 26th January, 1788, Governor Phillip had the whole fleet brought round from Botany Bay and snugly anchored in the cove, and hence it is that the 26th January is now celebrated as Anniversary Day.

The cove in those days ran much further inland than the present Circular Quay. A good deal of the early shipping, indeed, was done in what was called the Tank Stream, at a wharf near where the Harbour Trust offices now stand.

Sydney Cove in 1870.



CIRCULAR QUAY, SYDNEY COVE

Planning the Settlement.

In planning the settlement Governor Phillip showed himself possessed of ideas in advance of his time. He designed his principal streets with a width of 200 feet, but, with a directness of purpose more admirable in a governor than a surveyor, he took no account of grades. Governor Phillip's successors showed somewhat less indifference to grades and very much less generosity in the matter of width, so the streets of Sydney came to be 60 feet wide instead of 200 feet—hence the problem in traffic congestion which confronts the civic authorities to-day.

Early Shipping Days.

The transformation of Sydney Cove to the present Circular Quay was accomplished by slow stages and under the stimulus of much public agitation.

Some light is thrown upon wharf construction in those days by a general order of Governor King, dated November 29, 1803, stating, "The framing, lengthening and planking of the wharf on the eastern side is complete, and the inhabitants are expected to cart material to fill it up and to make a way to it." The authorities had another way of getting work done cheaply, as witness the general order of the 22nd July, 1806: "All persons loitering about the wharves will be put to hard labour for the rest of the day."

As years went by and trade expanded wharves were erected at Miller's Point and on the eastern foreshore of Cockle Bay, now Darling Harbour. The cove, however, continued to be the focus of the shipping trade. And when the quay wall no longer sufficed to accommodate the ships, the authorities proceeded to scarp the eastern side as far as Fort Macquarie, in order to provide "at moderate expense accommodation for thirty ordinary-sized merchantmen at one and the same time."

A Century's Progress.

The following table furnishes an index to the progress of the port during the nineteenth century. It gives the number of vessels and aggregate tonnage entering between 1800 and 1900:

Year.	No. of Vessels.	Aggregate Tonnage.
1800	29	7,642
1825	85	24,560
1830	157	31,225
1840	709	178,958
1860	852	292,213
1870	1,006	385,161
1880	1,277	837,738
1890	1,525	1,644,537
1900	1,819	2,716,651

Genesis of the Harbour Trust.

Up till the year 1901 the wharves, with a few exceptions, were practically in private hands. They were constructed to meet the requirements of individual owners. There was no system of laying out the foreshores. The city itself had grown up without method, and the same absence of plan characterised the provision for shipping. Access to the wharves was, in many instances, of the most difficult and mazy kind, and the general condition of things was such as to call for drastic treatment. Therefore the Government resumed the whole of the wharves, together with the stores and dwelling houses in the vicinity, and brought into being the Sydney Harbour Trust, with full powers of administration over the Harbour and the resumed property.

Many important works have been undertaken and carried out by the Trust during the eighteen years of its existence. Old and obsolete wharves have been replaced; new wharves and sheds have been constructed; the foreshores have been made rat-proof; Woolloomooloo, Blackwattle, Jones, Rozelle, and White Bays have been deepened; the berthing accommodation at Circular Quay for both mail steamers and ferries has been improved, and side by side with these works a comprehensive scheme of water-front reconstruction has been going forward. The tangle of streets and lanes in the vicinity of the wharves at Miller's Point and on the eastern side of Darling Harbour has been swept away.

Main Port Roadway.

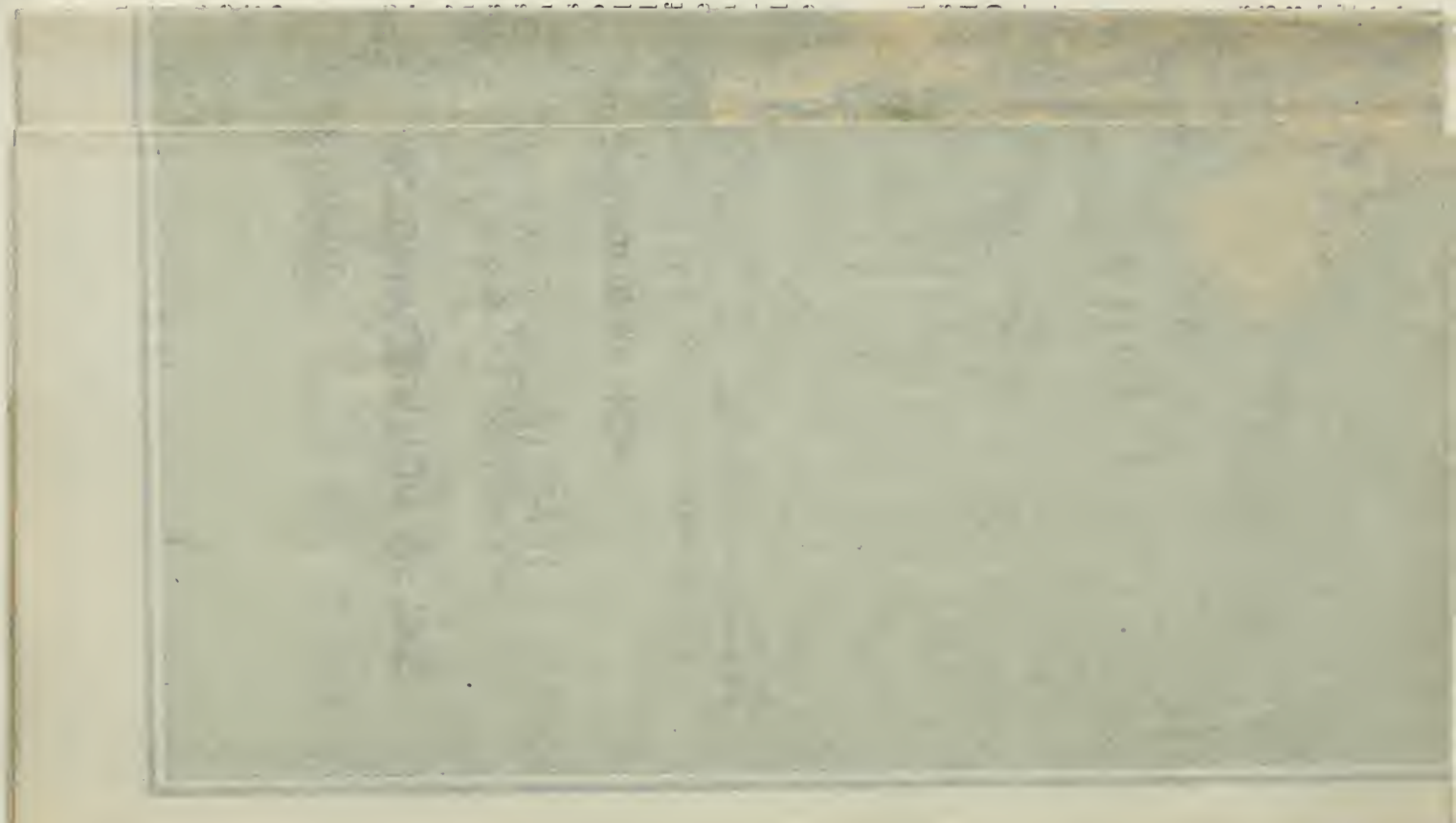
A 100 ft. roadway has been constructed round the water front from Dawes Point to the Australian Gas Light Company's premises, and, now that these premises have been resumed, this roadway will be carried through to Sussex Street.

Hickson Road Cutting.

Arrangements having been made between the Trust and the Railway Commissioners for the reclamation of the upper end of Darling Harbour above Bathurst Street to meet urgent railway

Wharfage Scheme, Miller's Point to Gas Works.

Waterside Workers' Flats—Children's Playground in Centre.



MAP
OF THE WHARF ACCOMMODATION OF THE
PORT OF SYDNEY
SCALE 8 CHAINS TO AN INCH
PORT JACKSON
NORTH SYDNEY
LAVENDER BAY
BLUES POINT
MILLERS POINT
WALSH BAY
DAWES POINT
FORT MACQUARIE
SYDNEY COVE
FARM COVE
GARDEN ISLAND
WATERVIEW BAY
WORRS BAY
BALLAST POINT
GOAT ISLAND
BALMAIN
JOHNSTONS BAY
ROZELLE BAY
BLACKWATTLE BAY
THE GLEBE
DARLING HARBOUR
POTTS POINT
WOOLLOOMOOLOO BAY
ELIZABETH BAY
RUSHCUTTERS BAY

requirements, the main Port Roadway will be continued from Bathurst Street across the new water frontage and extending in front of the Pyrmont coal jetties and the grain jetties and wharves on to Jones Bay, from whence it will be continued at a later date to Blackwattle, Rozelle, and White Bays. Thus in the near future there will be a practically level roadway connecting Circular Quay to the Railway Goods Yards and continuing on to Jones Bay, and eventually to Balmain.

Street Improvement and Housing Problem.

Amongst the properties acquired by the Harbour Trust at the time of the Darling Harbour resumptions were a number of streets, including parts of Kent, Sussex and Erskine Streets, and the Commissioners are responsible for the administration of a considerable area, embracing dwellings, shops and stores contiguous to the water front. Much needed improvement has been brought about by street widening and the construction of modern dwellings for waterside workers. The Commissioners have now completed 124 flats in Miller's Point, and in order to compensate for the absence of gardens or yard space, rendered inevitable by the limited area available, a common playground has been established in the centre of the row for the use of the younger children of the tenants. This is placed in charge of a directress with kindergarten experience. But much remains to be accomplished, and as effect is given to the comprehensive wharfage reconstruction schemes, further general improvement of the city adjacent to the water front will be brought about.

Cost of Improvements.

The Harbour Trust upon its creation in 1901 was debited with the cost of improvements made up to that time as well as the cost of the wharfage resumptions in 1900; these aggregated £4,700,000. In the last eighteen years upwards of £4,000,000 more has been spent, making a grand total expended upon harbour improvements and foreshore properties of about £9,000,000.

WHARFAGE OF THE PORT.

In Close Touch With City.

Exclusive of the numerous ferry wharves, and the jetties used for private purposes, there are in Sydney Harbour 62,496 feet of wharfage in actual use for shipping, and another 4,573 feet under construction, and nearing completion. The greater part of this accommodation is provided within half a mile of the General Post Office. It will be seen, therefore, that the port and the city are practically one so far as the mercantile and shipping community is concerned.

Potts Point, Woolloomooloo Bay, 1887.

The principal wharves are leased by the Harbour Trust to the various shipping companies, a reserve of open wharf accommodation being maintained for the convenience of vessels visiting the port casually.

Woolloomooloo Bay.

The first of the shipping areas as one approaches the city from the Heads is Woolloomooloo Bay. Here a general trade is carried on in over-sea goods. There are 5,720 feet of wharfage in use, and still further provision is about to be made.

The main feature at Woolloomooloo is the jetty running 1,140 feet down the centre of the bay. The jetty is 208 feet wide, and has a covered concrete roadway 53 feet in width down the centre, with double-decked sheds on either side. To facilitate loading the roadway is four feet below the level of the shed floors. Electric conveyors form part of the equipment. On the eastern side of the bay there are 1,973 feet of 'longshore wharfage with extensive shed accommodation.

Circular Quay.

Farm Cove intervenes between Woolloomooloo Bay and the next shipping inlet of Circular Quay—the Sydney Cove of the first settlers. The mail steamers continue to berth here, though of late years, owing to the great increase of ferry traffic, some of the big liners have had to be accommodated elsewhere. Seven berths are still available for shipping in the Quay, giving a total length of 3,718 feet.

Farm Cove.

Woolloomooloo Bay.

Walsh Bay.

The area between Dawes and Miller's Points, now called Walsh Bay, is still under reconstruction. A 'longshore wharf and two of the jetties, forming part of the scheme of nine 600 feet berths which are to be provided in this neighbourhood, have been completed, and work is proceeding on the other jetties. These berths will be available for the largest vessels. So deep is the water hereabouts that difficulty is experienced in getting piles of sufficient length for the work of construction. Some the piles in use are from 100 feet to 120 feet long.

Two-storeyed sheds are provided for these wharves, the upper floors of which will be connected by means of bridges across Hickson Road, to the streets on the higher level of the city, thus taking advantage of the steepness of the shore to practically double the capacity of the jetties.

Darling Harbour.

A large proportion of the trade of the port is done in Darling Harbour. There are 88 berths available, and all are in constant use for Interstate, State, and New Zealand trade. There are 100 vessels engaged in the coastal trade, collecting primary produce and raw material from the smaller ports and rivers of New South Wales, and returning with general cargo. Some of these coastal steamers approximate 2,000 tons each, while the interstate vessels range up to 9,000 tons.

The Pyrmont jetties are fitted with steam cranes and electric coal elevators.

Wheat for export is carried in bags by rail from the interior to the Darling Island wharves, whence it is transferred to the ships by electric conveyors, capable of loading 12,000 tons a day into seven vessels. The State's export of wheat varies, of course, with the seasons; in 1914, the last pre-war season, the shipments of wheat and flour amounted to 9,700,000 centals, equal to 16¼ million bushels. During the war large quantities were accumulated in the State owing to the shortage of shipping.

The new jetties in Darling Harbour have double-decked sheds with access to both high and low level roadways.

Vessels of the largest class are berthed at Miller's Point, Darling Harbour. The White Star Liner "Ceramic," of 18,000 tons, loads there to her full draught (34 feet 6 inches), and can proceed to sea at any state of the tide.

Jones' Bay.

Extensive wharfage accommodation has been provided at this point having connection with the State Railway system.

The main jetty is 1,200 feet long, and 255 feet wide, with central roadways on lower and upper decks, thus providing

up-to-date accommodation for four modern vessels. The wharf structure is of reinforced concrete, and the shed framing chiefly of steel.

The upper roadway, constructed of reinforced concrete, is connected by a bridge to the high levels of Pyrmont.

Another jetty provides accommodation for two 600 feet vessels.

Glebe Island and Bulk Wheat Shipment.

At Glebe Island a wharfage scheme is in course of construction in connection with the bulk handling of wheat.

Storage capacity for 6,000,000 bushels of wheat is being erected, and this is capable of extension to any required quantity. The wheat will be conveyed to vessels lying alongside in White, Johnston's and Rozelle Bays.

Provision is made in the present scheme for the unloading of grain from trucks at a maximum rate of 80,000 bushels per hour. This grain can be binned direct or part of it passed over the cleaning machines, which have an aggregate capacity of 36,000 bushels per hour. Shipment to ocean vessels can be made at the maximum rate of 60,000 bushels per hour, and the stream can be split up into four, thus feeding to four different vessels simultaneously.

The grain will be fed to six 36-inch conveyor belts which run out to the wharf galleries. Here the grain will be tripped off the conveyor to four travelling gantries, which will elevate to the height necessary for spouting it direct to the hold of the vessel.

Commencing with White Bay, the Trust is erecting wharf and shed accommodation for the discharge of general cargo from the incoming vessels, to which grain can be delivered as the holds are emptied and made ready to receive it.

FACILITIES AFFORDED BY THE PORT.

The marked increase in the size and draught of vessels which has taken place in the last two or three years has directed special attention to the capabilities and limitations of the chief ports of the world.

In this connection it may be interesting to set out briefly a few facts regarding the port and its navigation:—

1. The depth at the entrance is not less than 80 feet.
2. Midway between Inner South Head and George's Head, the Sow and Pigs shoal divides the fairway,

General View of Jones' Bay Wharfage Scheme.

Jetty at Jones' Bay, showing Upper Deck Roadway and Approach.

creating two channels—the eastern and the western. These channels are about half a mile long, with a minimum width of 700 feet, and are maintained by the uniform scour set up by the Sow and Pigs reef acting as a natural training wall.

3. The eastern channel has a depth of 40 feet at low water. It is entirely protected by the South Head, so very little, if any scend need be allowed for. The channel is well lighted and can be safely used at any time, day or night, by vessels of the largest class.

4. The western channel is now being deepened to 40 feet at low water, and in the near future it will be available for inward-bound vessels. It will provide an almost straight run in from the Heads. The eastern channel will then be used for outward-bound vessels only.

5. When the work of deepening the western channel is completed, the port will occupy an almost unrivalled position in possessing separate incoming and outgoing deep-ship channels.

6. After passing the channel, vessels are able to navigate in from 40 to 50 feet of water to the city wharves four miles distant.

7. As the bottom of both eastern and western channels is sand, no difficulty will be experienced in providing still deeper water if ever required.

8. The new wharves and jetties erected by the Harbour Trust range in length from 500 feet to 1,140 feet, and up to 250 feet in width.

9. The depth of water at the wharves ranges from 30 feet to 50 feet. As the rock shelves off rapidly from the water front any depth of water likely to be required by vessels of the future can be secured.

10. The total area of water in the port is 14,284 acres, or about 22 square miles, of which 3,000 acres have a depth of from 35 feet to 160 feet. Exclusive of the fairway and the bays (in which most of the shipping is at present accommodated) there are over 1,000 acres available and suitable for anchoring vessels of the deepest draught.

11. The rise and fall of the tide is from three to six feet, and the depth available for all shipping accommodation is reckoned on the basis of low water ordinary spring tide.

TRADE OF THE PORT.

Nineteen Years' Shipping.

The tonnage of shipping entering the port during the last nineteen years is shown in the following table. The steady increase shown up to the outbreak of war will doubtless be again in evidence when normal conditions prevail.

Year ending 30th June.	No. of Vessels.	Aggregate Nett Tonnage.	Aggregate Gross Tonnage.
1901 ..	1,884 ..	2,953,511 ..	..
1902 ..	5,722 ..	4,101,290 ..	..
1903 ..	6,093 ..	4,226,954 ..	..
1904 ..	7,552 ..	4,754,550 ..	..
1905 ..	9,616 ..	5,681,081 ..	..
1906 ..	10,280 ..	6,609,087 ..	..
1907 ..	10,374 ..	7,170,139 ..	..
1908 ..	10,023 ..	7,107,574 ..	..
1909 ..	8,944 ..	6,901,057 ..	..
1910 ..	8,844 ..	7,137,308 ..	..
1911 ..	9,332 ..	7,606,312 ..	..
1912 ..	9,524 ..	8,191,083 ..	..
1913 ..	9,673 ..	8,714,062 ..	..
1914 ..	10,142 ..	9,437,310 ..	..
1915 ..	9,446 ..	8,164,133 ..	..
1916 ..	9,285 ..	7,535,277 ..	..
1917 ..	8,453 ..	6,725,828 ..	..
1918 ..	7,538 ..	5,320,400 ..	9,058,568
1919 ..	7,499 ..	5,152,666 ..	8,806,090

Sydney—the Fifth Port of the Empire.

Though the port of Sydney dates from the beginning of Australian history, compared with other ports of the world it is but in its infancy.

In 1841 the population of the colony was 116,731. The discovery of gold in the early fifties gave an impetus to immigration, and in 1856 the population had grown to 252,640. To-day the population of New South Wales is just upon 2,000,000, and the shipping trade of Sydney is only exceeded by that of four ports in the United Kingdom, namely, London, Liverpool, the Tyne, and Cardiff. It has to be remembered that the trade of Sydney is the trade of its own State. In this respect it differs

from such ports as Capetown and Durban, which supply the needs of inland States as well as their own. There is, however, a considerable amount of transhipment in Sydney for the Island ports of the Pacific.

Tonnage of Imports.

The great bulk of the sea trade of the State passes through the port of Sydney. For the year ending 30th June, 1914, the last of the pre-war years, 5,081,270 tons of goods were imported, made up as follows:—

Deep sea	1,939,703	tons
Interstate	912,661	,,
State	2,228,906	,,

Taking imports and exports together the total value of the trade of the port for the same period amounted to about £100,000,000.

British and Foreign Shipping.

This trade is chiefly conducted under the British flag, but since 1881 until the outbreak of war, there had been a notable increase in foreign shipping—French, German, American, Japanese and Dutch companies being regular traders to the port. Taking New South Wales as a whole, the tonnage of British ships in 1865 was 94.12 per cent. of the total shipping; in 1918 it was 86.28 per cent. Vessels owned in the Commonwealth represent 48.34 per cent. of the total tonnage. Nevertheless the trade of New South Wales with the United Kingdom is far greater than with any other country, and the prospects are for a further proportionate increase. In pre-war days we imported annually from the United Kingdom between £15,000,000 and £16,000,000 worth of manufactured and miscellaneous goods, sending in exchange two-fifths of our surplus products, consisting chiefly of wool, wheat and flour, butter, frozen and preserved meats, tallow, skins and hides, gold, copper, silver and lead, tin, zinc concentrates, leather and cocoanut oil.

It is worthy of note that trade with British possessions is a steadily increasing quantity. In this connection New Zealand is our best customer. Of our total exports to British possessions that Dominion takes 43 per cent.

The Wool Trade.

Despite the great development in agricultural settlement, New South Wales continues to be the chief wool-producing State of the Commonwealth. Wool constitutes more than half the total value of the State's domestic exports.

Loading Wool.

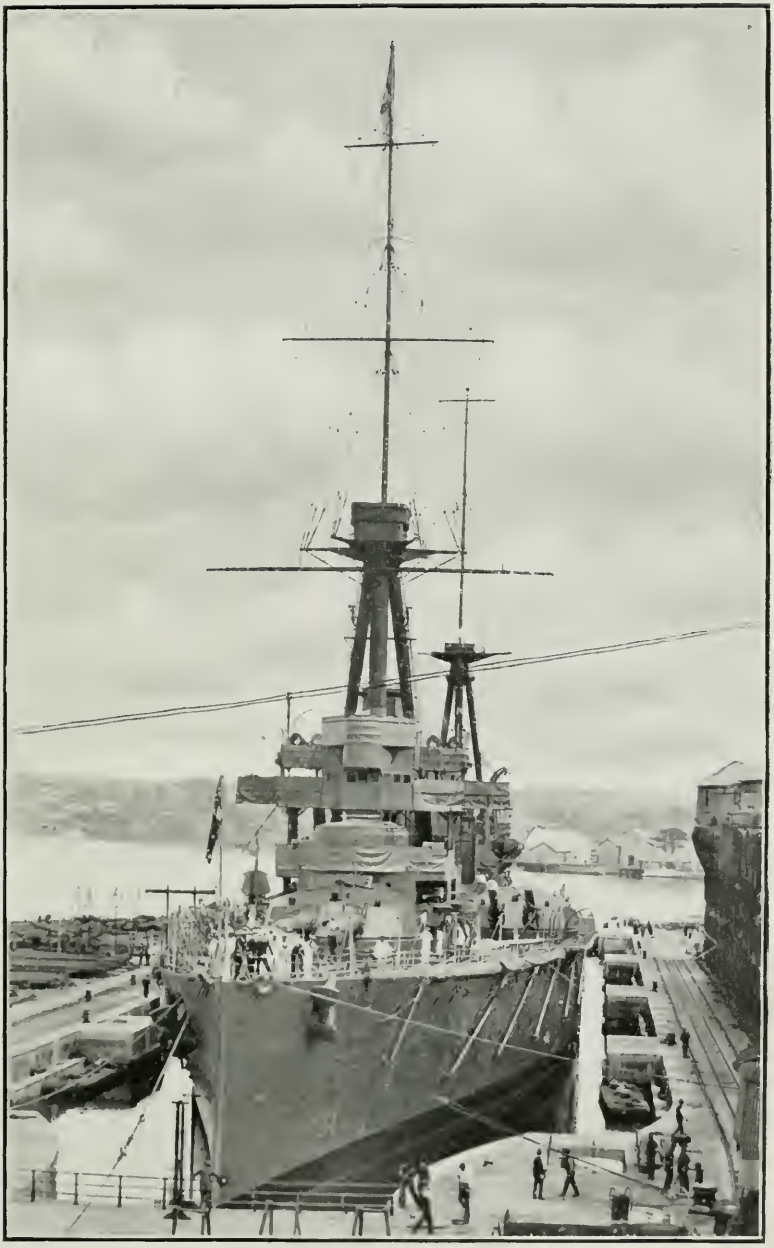
The wool is brought to Sydney by rail, or by steamer from coastal ports, and distributed to the stores at or near the waterside for sampling and dumping. Several large stores are owned by the Harbour Trust Commissioners and leased by them to wool firms. The largest waterside wool store has a floor space of 398,000 square feet, and a storage capacity of 75,000 bales. It is fitted with electric conveying appliances and hydraulic lifts, and by means of chutes which run from the upper floors to the wharf 15,000 bales of wool can be put down at the ship's side in 24 hours. As many as 993,038 bales of wool have been shipped from Sydney in one season.

The "Timber Bays."

An extensive trade is carried on in Blackwattle, Rozelle, White and Johnston's Bays. The importation of timber for the last pre-war year, ending 30th June, 1914, amounted to 268,000,000 superficial feet, of which about 70,000,000 superficial feet was hardwood. Sydney is the principal distributing centre for New South Wales hardwoods. These industries will, however, have to find new homes, as these foreshores are required for the Trust's extensive new deep sea wharfage scheme.

DOCKING ACCOMMODATION.

There are in Sydney four large graving docks, five floating docks, and seven patent slips. Two of the graving docks—the Sutherland and the Fitzroy, situated on Cockatoo Island—are owned by the Commonwealth Government. The other two are the property of Mort's Dock and Engineering Company, one being situated at Mort's Bay and the other at Woolwich. Details concerning docking accommodation will be found on page 54.



H M.A.S. "Australia" in Sutherland Dock.

Fitzroy Dock.

Fitzroy Dock dates back to about 1860, when Cockatoo Island was a Penal Establishment. This dock, which originally had a length of 300 feet, was constructed by the prisoners, who were withdrawn from the Island in 1870. Since that time it has been twice lengthened, and now has an extreme length of 496 feet.

Sutherland Dock.

Sutherland Dock was built at the instance of the N.S.W. Government mainly to accommodate British warships on this station. Work was commenced in 1883, and it was completed in 1887. This dock has an extreme length of 633 feet, and is provided with all modern appliances, including electric light, so that it is available both night and day. The largest warship to be docked in it previous to the formation of the Royal Australian Navy was H.M.S. "Powerful," which displaced about 14,000 tons. Since then the Dock has been enlarged at lower part of sides, and side blocks added in order to accommodate H.M.A. battle cruiser "Australia," which has a displacement of 18,800 tons.

Naval Construction.

The construction of the first warship undertaken by the Dockyard was commenced in December, 1910, when, in accordance with the building programme laid down by Admiral Henderson, the keel of the H.M.A.T.B.D. "Warrego" was laid on No. 3. Slipway. This vessel was built in Scotland and shipped to Cockatoo in parts and reconstructed. Since then the following warships have been constructed and fitted out at Cockatoo Island, namely:—H.M.A.S. "Brisbane," light cruiser; H.M.A.S. "Huon," T.B.D.; H.M.A.S. "Torrens," T.B.D.; H.M.A.S. "Swan," T.B.D. All these vessels were completed in 1916. Almost the whole of the material for these vessels was imported from Great Britain, but the work of construction was carried out by the Dockyard. The main machinery and boilers were manufactured and fitted to the "Huon," "Torrens" and "Swan," and also the "Brisbane," except that for the last named vessel the turbines were manufactured in Great Britain. The cruiser "Adelaide" was laid down in November, 1917, launched in July, 1918, and is now in hand completing. Main machinery and boilers for the "Adelaide" are being manufactured at the Dockyard.

A large collier, with a displacement of 10,000 tons, for conveying coal and oil to the ships of the Australian Fleet, has just been launched. She has been, with trifling exceptions, constructed wholly of materials manufactured in Australia, the plates having been rolled by the Broken Hill Proprietary Co. at Newcastle.

Dredges, lightships, tugs, floating cranes, etc., have also been constructed.

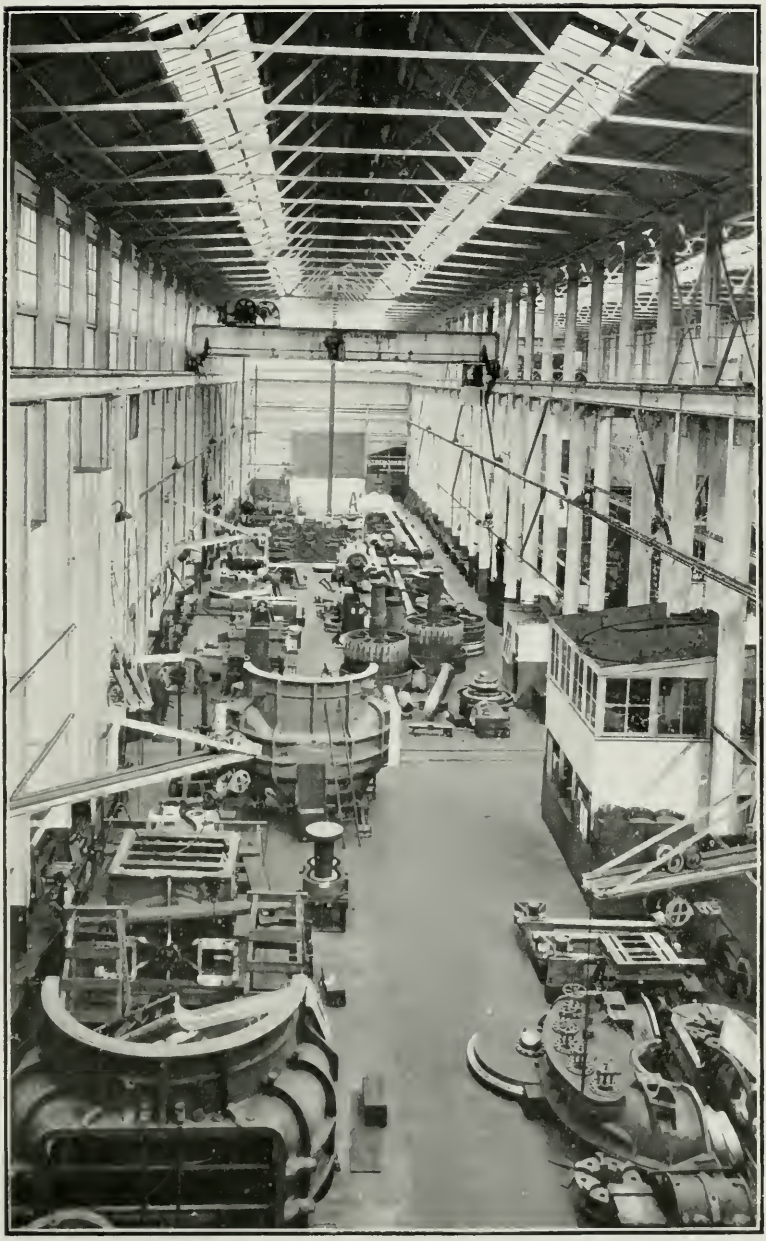
The establishment comprises:—Platers' shed, frame bending shop, shipwrights' shop, boathouse and sawmill, fitting shops, plumbers' shop, sheet iron workers' shop, galvanising shop, steel foundry, iron foundry, brass foundry, smiths' shop, forge, boiler shop, turbine shops, machine shops, brass finishing shop, power house, joiners' shop, pattern makers' shop, fitting out shop, bolt shop, coppersmiths' shop, rigging loft, tool store, testing house, laboratory, storehouses, painters' shop, and all other accessories of a modern shipbuilding and engineering establishment. An average of 2,750 men is at present employed.

The Dockyard was taken over by the Commonwealth Government from the N.S.W. Government on 1st February, 1913, and is now a Naval Establishment under the Department of the Navy.

Mort's Dock.

Mort's Dock and Engineering Company of Balmain dates back to the early fifties, and its progress has been synchronous with the development of the port. In addition to the works at Mort's Bay, the company has branch establishments at Woolwich and Johnston's Bay. The works at headquarters cover eighteen acres, and comprise a graving dock 640 feet long, three patent slips equipped with steam and hydraulic plant, a sheerlegs with a lifting capacity of 65 tons, 2,000 feet of wharfage, together with the necessary shops and plant for shipbuilding, engineering, boilermaking, casting metals, and the other trades connected with these industries. Forty vessels of various kinds have been built at Mort's Dock since it embarked upon that industry.

At Woolwich the company has 20 acres, with two water frontages for berthing vessels. The dock here has a length of 850 feet, and can take in vessels drawing 28 feet. With the pumping plant in use the dock can be emptied in from one-and-a-half to two-and-a-half hours. There is also a pontoon dock capable of lifting vessels of 1,400 tons.



Turbine Construction Shop—Cockatoo Dockyard.

The Jubilee Dock branch at Johnston's Bay comprises two floating docks for dealing with vessels of 1,200 tons and 120 tons respectively.

Last year the company docked 626 vessels, aggregating 887,260 tons.

COAL AND BUNKERING.

The requirements of the port in the matter of coal are supplied by a fleet of 32 colliers, which bring regular supplies from the coal ports north and south of Sydney, and for bunkering purposes usually discharge direct into the ocean going vessels. The Railway Department also trucks considerable quantities from the South Coast and Blue Mountain collieries to the railway jetties at Pyrmont. Supplies are also obtained from the Balmain colliery on the foreshores of the port.

There are sixteen hulks in constant use for bunkering purposes. The quantity of coal loaded into the bunkers of vessels in the last pre-war year, ending 30th June, 1914, was 1,092,000 tons.

An extensive bunkering scheme for the port has been inaugurated by the Coal and Bunkering Co., Ltd., and the works at Ball's Head are approaching completion. Large stocks of coal and oil are to be held here, and vessels coming alongside will be bunkered with the utmost dispatch by means of elaborate up-to-date loading appliances.

The Sydney Harbour Colliery.

Amongst the industries of the port that of the Sydney Harbour Colliery Company, Limited, commonly known as the Balmain colliery, is deserving of mention, if only because of the many difficulties it has overcome in winning coal from under Sydney Harbour.

The idea of mining for coal under the bed of the port took shape 28 years ago, when a private syndicate put down a bore at Cremorne Point and discovered a seven feet seam at a depth of 3,095 feet. Unfortunately a dolerite dyke bed intruded into the seam at this point, and the coal had been partially converted into coke by the action of molten rock. With assistance from the Government, a second bore was put down at another spot, and at 2,912 feet a fine seam was met with ten feet three inches thick. These boring operations established the fact that the Newcastle and Illawarra coal measures are continuous under Sydney, where they reach their greatest depth.

Another interruption came when the company proposed to sink its shafts on the foreshore near Bradley's Head; the public objected to the natural beauty of the harbour hereabouts being

disfigured by mining plant. So the shafts were put down near Long Nose Point in the upper portion of the harbour, three miles distant. Half a million sterling was swallowed up before the company won a ton of coal. The company estimates that it has 100,000,000 tons of coal in its leases.

The colliery is able to load coal direct into over-sea steamers from its own wharf.

TIME, TIDES AND WEATHER.

The Observatory on Flagstaff Hill, 150 feet above sea level, occupies a commanding view of the shipping of the port. Its latitude is 33 degrees 51 minutes 41 seconds south, its longitude 151 degrees 12 minutes 23 seconds east; the difference between Greenwich and Sydney time being 10 hours 4 minutes 50 seconds, and the magnetic variation 9 degrees 29 minutes 20 seconds east.

For the convenience of shipping a time-ball is dropped daily on the tower of the Observatory at 1 p.m. Simultaneously with the dropping of the ball a gun is fired on Fort Denison by an officer of the Harbour Trust.

Sydney Observatory.

A special weather report is issued daily by the Federal Meteorological Department of the Observatory giving the results of observations telegraphed from all parts of the Commonwealth, together with a forecast of the probable weather for the next 24 hours.

Weather flags are displayed over the Customs House and on the tower of the Commonwealth Bank Building, and storm signals at South Head and on Flagstaff Hill.

The automatic tide gauge established at Fort Denison in 1872 has been replaced by one of the modern type, and two others have been installed at Watson's Bay and Cockatoo Island respectively.

At North Head it is high water, full and change, at 8hr. 15m., springs rising 6 feet; and at Fort Denison at 8h. 40m.; the rise at ordinary springs is 5¼ feet, and at neaps 4 feet.

From April to October p.m. tides are higher than a.m. tides: in June and July this difference sometimes amounts to over two feet, and the reverse occurs in December and January. From October to April a.m. tides are the higher.

TESTING OF VESSELS' SPEED.

For testing the speed of vessels there is a marked nautical five-mile run outside the Heads between the northern headland of Maroubra Bay and Kurnell, while in the harbour smaller vessels may test their speed over a measured mile between Fort Denison and Bradley's Head.

LICENSED VESSELS.

The following craft ply for hire in the port:—

	No.	Tonnage.
Lighters	509	24,539
Tugs	56	1,734
Water boats	14	388
Hulks	24	13,149
Launches	15	191
Ferry steamers	58	7,798
Watermen	26	—
Cranes, Hoisting plant, Floating plant, Pile drivers	17	614
Motor launches	85	—

PUMPING AND SALVAGE PLANT.

An efficient Harbour Trust Fire Brigade is stationed at Goat Island, and the following fire-fighting appliances are available for use:—

S.S. "Hydra."—Fire pump. $\frac{14\frac{1}{4} \text{ in. x } 20\frac{1}{4} \text{ in.}}{9 \text{ in.}}$ $13\frac{1}{2}$ in. water ends; discharge capacity 3,500 gallons per minute; suction 8 in.: delivery $2\frac{3}{4}$ in. Can work eight $2\frac{1}{2}$ in. hoses and one 4 in. hose.

S.S. "Plevius."—Fire pump, $\frac{13 \text{ in. x } 18\frac{1}{2} \text{ in.}}{8 \text{ in.}}$ 12 in. water ends; discharge capacity 2,500 gallons per minute; 2 suctions $4\frac{3}{4}$ in.; delivery $2\frac{3}{4}$ in. Can work six $2\frac{1}{2}$ in. hoses and one 4 in. hose.

S.S. "Cecil Rhodes."—Fire pump, $\frac{14\frac{1}{4} \text{ in. x } 20\frac{1}{4} \text{ in.}}{9 \text{ in.}}$ $13\frac{1}{2}$ in. water ends; discharge capacity 3,500 gallons per minute; 2 suctions, $5\frac{3}{4}$ in. diameter, delivery $2\frac{3}{4}$ in. Can work eight $2\frac{1}{2}$ in. hoses and one 4 in. hose.

This gives a total of 9,500 gallons per minute from 22 $2\frac{1}{2}$ in. hoses and three 4 in. hoses.

These steamers are also fitted with heavy suction pipes for salvage purposes.

In addition to the Harbour Trust plant in the port there is a large quantity of salvage plant privately owned. The Sydney Marine Underwriters' and Salvage Association, and several firms, are owners of vessels equipped with centrifugal pumps and other apparatus, also pumps which are mounted on vessels as required for salvage purposes.

SIGNALS IN USE IN THE PORT.

Want Boarding Officer	Numerical flags of Port Jackson Code of signals denoting port from which arrived, or International Code Signal.
Want Customs Boat	Jack at the peak.
Want Harbour Pilot	International code S at the foremast head.
Want Medical Assistance	International code H at the peak.
Want Sea Pilot	Jack at the foremast head.
Want Steam Tug	International code YP at the mainmast head.
Want Water Boat	International code GUJ at the mainmast head.
Want Water Police	International code YN at the mainmast head.
Explosives on Board	Flag B at the foremast head.
Mails on Board	International code T at the foremast head; to be kept flying until the mails are landed.
Pilot Exemption	Square white flag and numerical flags of Port Jackson Code of signals denoting port from which arrived.

	Sunrise to Sunset.	Sunset to Sunrise.
Oil vessel	Red flag, 3 ft. square	Red light at masthead.
Quarantine	Flag Q at the mainmast head.	Three lights (two red and one white) placed as nearly as practicable amidships at distances of six feet apart in the form of an equilateral triangle with the apex (the white light) above.
Cholera, Yellow fever, Plague. Smallpox, Typhus fever, or Leprosy.	Commercial flag L at the mainmast head.	

Fire Fighting Plant—"Hydra" and "Pluvius."

DARLING HARBOUR – Port of Sydney

TABLE OF DISTANCES.

NAUTICAL MILES BY ORDINARY SEA ROUTES.

Australasian Ports.

Sydney to Adelaide	980	miles
„ „ Albany	1,790	„
„ „ Auckland	1,280	„
„ „ Brisbane	510	„
„ „ Fremantle	2,100	„
„ „ Hobart	630	„
„ „ Melbourne	575	„
„ „ Port Darwin	2,435	„
„ „ Thursday Island	1,685	„
„ „ Wellington	1,240	„

British and Foreign Ports.

Sydney to Aden	6,875	miles
„ „ Bombay	6,005	„
„ „ Capetown	6,375	„
„ „ Colombo	5,125	„
„ „ Hongkong	4,400	„
„ „ Honolulu	4,425	„
„ „ London, via South Africa	12,625	„
„ „ London, via Cape Horn	12,850	„
„ „ London, via Suez Canal	11,490	„
„ „ London, via Panama Canal	12,770	„
„ „ Marseilles	9,795	„
„ „ Naples	9,375	„
„ „ New York, via Panama Canal	10,030	„
„ „ San Francisco	6,500	„
„ „ Singapore	4,175	„
„ „ Suez	8,187	„
„ „ Suva	1,775	„
„ „ Vancouver	7,050	„

DOCK ACCOMMODATION IN SYDNEY.

Name of Dock.	Where situated.	Length.	Breadth.	Draught of water on sill Spring Tide.	Lifting power of plant.	Appliances.
GRAVING DOCKS—						
Sutherland	Cockatoo Island ...	Outer caisson 633 ft. Inner caisson 603 ft.	84 ft.	31 ft. 4 in. h.w.o.s.t.	...	2 Dock cranes, load 1 tons inner jib, and 1½ tons outer jib.
Fitzroy	Cockatoo Island ...	Outer caisson 496 ft. Inner caisson 474 ft.	50 ft.	20 ft. 5 in. h.w.o.s.t.	...	36 cantilever and jib cranes, working loads from 1 to 5 tons.
Mort's Dock	Mort's Bay Balmain	640 ft.	69 ft. cope ... 69 ft. entrance ... 59 ft. floor ...	16 ft. 6 in. h.w. ... 12 ft. 6 in. l.w ...	...	Mort's Dock, sheerlegs to 65 tons.
Woolwich Dock ...	Parramatta River ...	850 ft.	100 ft. cope ... 83 ft. entrance ... 75 ft. floor ...	28 ft. h.w. ... 23 ft. l.w. ...	...	Loco cranes. 15 tons crane at entrance, Electric capstans.
FLOATING DOCKS—				DRAUGHT OF VESSELS THAT MAY BE TAKEN.	DEAD-WEIGHT TONS.	
Woolwich Pontoon ...	Woolwich, Parramatta River	195 ft.	56 ft. at altars ...	12 ft.	1,400	
Jubilee Dock	Johnston's Bay ...	317 ft.	55 ft. overall ... 44 ft. entrance	13 ft.	1,200	
Jubilee Dock (small) ...	Johnston's Bay ...	100 ft.	23 ft.	7½ ft.	120	
Red Star (Rowntree's)	Waterview Bay ...	160 ft.	43 ft.	12 ft.	474	
Drake's	White Bay	150 ft.	40 ft.	7½ ft.	300	
SLIPWAYS—						
* No. 1 (Cruiser)	Cockatoo Island ...	550 ft.	57 ft. 6 in. ...	... ...	...	1 15-ton Electric cantilever travelling crane.
† No. 2 (T.B.D.)	Cockatoo Island ...	295 ft.	45 ft.	... ...	...	1 5-ton Electric travelling jib crane.
‡ No. 3 „ ...	Cockatoo Island ...	295 ft.	45 ft.	... ...	...	1 150-ton Electric revolving floating crane load:—
No. 5		200 ft.	90 ft.	... ...	...	150 tons at 90 ft. rad.
No. 6						100 tons at 125 ft. rad.

Dock Accommodation in Sydney.—*Continued.*

Name of Dock.	Where situated.	Length.	Breadth.	Draught of vessels that may be taken.	Dead-weight tons.	Appliances.
PATENT SLIPS—						
Mort's No. 1	Mort's Bay, Balmain	270 ft.	36 ft.	11 ft. f'wd. 16 ft. aft.	1,500	
Mort's No. 2	,, ,,	200 ft.	25 ft.	8ft. f'wd. 14 ft. aft.	800	
Mort's No. 3	,, ,,	58 ft.	15 ft.	1 ft. fd. 6ft. 6 in. aft.	40	
No. 1	Cockatoo Island ...	105 ft.	28 ft. arms ... 20 ft. cradle ...			
No. 2	,, ,, ...	33 ft.	10 ft. arms ... 6 ft. cradle ...			
Chapman's	Waterview Bay, Balmain	480 ft.	54 ft.			
Woodley's	Berry's Bay ...	90 ft.	28 ft.	10 ft.	75	

* Can be lengthened to 620 ft., and widened to 65 ft.
† Can be lengthened to 300 ft., and widened to 48 ft.
‡ Can be lengthened to 331 ft.

The Woolwich Dock is capable of being pumped out at the rate of about 14,000 tons per hour, and is emptied in from 1½ to 2½ hours. Sutherland and Fitzroy Docks are pumped out at about the rate of 1,200 tons per hour. The time approximating for :—

Sutherland Dock.....4 hours.
Fitzroy Dock .....3½ hours.

SCHEDULE OF RATES, CHARGES, AND DUES IN OPERATION IN THE PORT.

Inward Wharfage and Harbour Rate: Payable by owners on goods entering the port except goods belonging to H.M. Government and passengers' luggage. On general merchandise the rate is 4/- per ton by weight, or 3/- per ton of 40 cubic feet measurement, in the option of the Commissioners, but there are a number of special rates lower than the general rate (vide schedule).

Outward Wharfage and Harbour Rate: Payable by owners on goods chargeable with outward rates leaving the port. The general rate is 10d. per ton on the leading lines of primary products, but there is a special rate of 6d. per bale on wool, 6d. per ton on wheat, 3d. per ton on coal and coke, and 4½d. per ton on ore (vide schedule).

Harbour Trust Offices.

Transhipment Rates: There is a general rate of 6d. per ton on all goods in respect of which a transhipment entry is passed within 48 hours of vessel reporting, either at the Customs or with the Commissioners, and which are removed from wharves within fourteen days of landing thereon. There are a number of special rates ranging down to ¾d. per ton (vide schedule). Failure to pass entries or to remove goods within the stipulated time entails the penalty of double rates.

Explosives: The transhipment rate of 6d. per ton is charged on all explosives on being entered for the Government magazines. If subsequently landed in the port an extra charge of 3s. 6d. per ton is made.

TONNAGE RATES.

ON VESSELS OVER 240 TONS NET REGISTER.

(*a*) For each complete period of 24 hours after the time of berthing ½d. for each ton of the gross tonnage measurement of the vessel, and for periods of less than 24 hours at the rate of ⅛d. for each ton gross in respect of each period of 6 hours or part thereof.

(The latest edition of Lloyd's Register is evidence of the tonnage of all vessels).

As most of the principal wharves vested in the Commissioners are leased by them to Shipping Companies, the tonnage rates on vessels owned by, chartered by, or consigned to the Lessees are not charged as they accrue, but are accounted for in rent. To Lessees so assessed a concession has been made, according to which Lessees can berth their vessels at one another's wharves free of tonnage rates.

Wharves that are not leased are regarded as "open" berths, and all vessels berthing thereat are charged tonnage rates.

BERTHING RATES.

Payable by vessel when berthed at any of the Commissioners' wharves.

ON VESSELS UP TO 240 TONS REGISTER.

FERRY AND EXCURSION BOATS.

Vessels with a capacity for not more than	50 passengers ..	2/6	per day or portion of a day	
,, ,, ,, ,, ,, ,,	100 ,, ..	5/–	,,	,,
,, ,, ,, ,, more than	100 ,, ..	10/–	,,	,,
Vessels engaged in horse ferry traffic ..	.. .. ..	10/–	,,	,,

OTHER BOATS.

Boats not exceeding 60 tons register ..	.. .. .	2/6	,,	,,
,, over 60 tons and under 120 tons register	.. ..	5/–	,,	,,
,, ,, 120 ,, ,, ,, 180 ,,	,, ...	7/6	,,	,,
,, ,, 180 and not exceeding 240 tons register	.. ..	10/–	,,	,,

SUMMARY OF CHARGES ON GOODS.

Inward Wharfage, Harbour and Transhipment Rates.

ARTICLE.	Column 1. Inward Wharfage and Inward Harbour Rate.	Column 2. Transhipment Rate.
	s. d.	d.
A.—ARTICLES the produce of, shipped at, and arriving from any port within the Commonwealth:—		
Bacon, Bark, Bones, Butter, Cheese, Cream, Eggs, Fish, Hams, Oysters, Poultry, Rabbits and Tinned Milk .. .. .. per ton	2 0	6
Maize .. .. per bag	3	1
Timber (sawn) .. .. per 600 ft. super.	2 0	6
Timber (rough) .. .. per 480 ft. super.	2 0	6
Timber (in shooks) .. .. per 40 ft. cubic	2 0	6
Post, Rails and Naves .. .. .. per 100	2 0	6
Palings .. .. per 600	2 0	6
Returned empties (direct from original consignee to original consignor) .. per ton	6	3
Returned empties (other) .. .. per ton	1 3	6
Road metal and gravel .. .. per ton	2	1
Spokes, felloes and shafts .. .. per 500	2 0	6
B.—GENERAL ARTICLES:—		
Animals—Calves .. .. .. each	9	3
Horses and Horned Cattle .. each	2 6	6
Sheep, Goats and Pigs .. each	6	1½
Bricks, loose, Clay, and Fire, not exceeding in size 9in. x 4½ in. x 3in. per 500	2 0	6
Coal .. .. per ton	6	3
Coal (bunker) .. .. per ton	3	
Cocoanuts .. .. per 100	6	2
Cocoanuts .. .. per bag	3	1
Coke .. .. per ton	9	3
Copra .. .. per ton	2 6	6
Firewood .. .. per ton	3	¾
Fruit (green) .. .. per pkg.	1¼	p. ton 6
Gypsum .. .. per ton	1 3	6
Iron Tanks (empty) 400 gallons .. each	2 0	6
Iron Tanks (empty) 200 gallons and under .. .. each	1 0	3
Kerosene in case .. .. .. per case	2	½
Liquid fuel .. .. per ton	2 6	6
Lucerne Hay .. .. per ton	1 8	6
Ore .. .. per ton	9	2¼
Phosphatic rock .. .. .. per ton	1 3	6
Pumpkins, Melons and Squashes .. per 100	6	1½
Pumpkins, Melons and Squashes .. per bag	1½	½

Summary of Charges on Goods.— *Continued.*

ARTICLE.		Column 1. Inward Wharfage and Inward Harbour Rate.	Column 2. Transhipment Rate.
		s. d.	d.
Returned empties (excluding bags in bales, casks in shooks and tanks)	per ton	1 8	6
Returned empties (bags in bales and casks in shooks)	per ton	2 0	6
Sand, Gravel, Stone-ballast and Soil	per ton	6	3
Sugar and Molasses which go through a mill-refining process after importation	per ton	1 8	6
Tiles (Clay roofing)	per ton	2 0	6
Timber (sawn)	per 600 ft. super.	3 0	6
Timber (rough)	per 480 ft. super.	3 0	6
Wool	per bale	8	3
Goods not enumerated above	per ton by weight	4 0	6
Goods not enumerated above	per ton of 40 cubic ft. measurement.	3 0	6
Minimum charge		3	3

Outward Wharfage and Harbour Rates.

ARTICLE.		Outward Wharfage & Outward Harbour Rate.
		d.
Bones, Butter, Cement, Copper, Fats (animal), Flour, Sharps, Bran, Pollard, Glue Pieces and Sinews, Hides, Hoofs and Horns, Leather, Margarine, Meat (frozen), including Hares and Rabbits, Oil Cake, Oleine, Preserved Meats, Skins, Tallow, Stearine and Tin	per ton	10
Coal (including bunker coal)	per ton	3
Coke	per ton	3
Ore	per ton	$4\frac{1}{2}$
Wheat	per ton	6
Wool (greasy, scoured and tops) ..	per bale	6

Note.—(a) Where inward Wharfage rates have been paid, inward Harbour rates will not be collected.

(b) Unless transhipment entries are passed within forty-eight (48) hours of ships reporting, and the transhipment takes place within 14 days of the landing of the goods, double the above transhipment rates will be charged.

(c) Unless otherwise specified, all goods are chargeable by weight or measurement at the option of the Commissioners.

(d) On goods transhipped, outward Wharfage or Harbour rates will not be charged.

NAVIGATION DEPARTMENT CHARGES.

Pilotage, harbour and light dues, and harbour removal fees are paid to the Collector of Customs on account of the Navigation Department as follows:—

Pilotage Rates.

(*a*) Upon every ship (not exempt) on her arrival and on her departure in ballast	1¼d. per ton
(*b*) Upon every ship on her arrival for the purpose of refitting or docking and for no other purpose	1¼d. „ „
And on her departure after refitting, etc.	1¼d. „ „
Provided that should the ship discharge or load any cargo or land or take on board any passengers in the port for the purpose of or incidental to earning freight or passage money, on her arrival and departure	2½d. „ „
(*c*) Upon every ship, not being a ship of war, on pleasure, calling for orders, effecting repairs, obtaining provisions or coal to be used in the ship on her voyage or through stress of weather or being otherwise in distress, on her arrival and departure	1¼d. „ „
Provided that should the ship discharge or load any cargo, or load or take on board any passengers for the purpose of or incidental to earning freight or passage money, on her arrival and departure	2½d. „ „
(*d*) Upon every ship, on her arrival and departure, under circumstances other than those hereinbefore set forth	2½d. „ „

Minimum Rates.

Upon every ship on her arrival at or her departure from the port of Sydney	£3 0 0

Maximum Rates.

No such rates, on the arrival at or departure from the port, shall exceed	£25 0 0

Exemptions.

Every registered ship, whether propelled by steam or otherwise:—

(*a*) The master of which possesses a valid pilotage certificate, or

(*b*) Engaged in the whaling trade shall, except in cases where the master thereof actually employs the service of a pilot, be exempt from pilotage.

HARBOUR AND LIGHT DUES.

Upon every registered ship (not exempted) whether propelled by steam or otherwise, a half-yearly harbour and light rate is payable on or before the 30th June and the 31st December, at the rate of 4d. per ton.

EXEMPTIONS:—

(*a*) Vessels employed in the whaling trade, and

(*b*) Vessels arriving at or departing from the port, under circumstances upon which the pilotage rate is fixed by any subdivision under (*b*) and (*c*) at 1¼d. per ton.

(*c*) Vessels in respect of which such rates have been paid at any port within the jurisdiction during a period not exceeding six months prior to arrival at Port Jackson.

HARBOUR REMOVAL DUES.

Dues payable for removing ships from one place to another:—

				£	s.	d.
On vessels not exceeding 300 tons				1	0	0
On vessels exceeding 300 tons and not exceeding			400	1	5	0
do.	400	do.	500	1	10	0
do.	500	do.	600	1	15	0
do.	600	do.	800	2	0	0
do.	800	do.	1,000	2	10	0
do.	1,000	do.	1,500	3	10	0
do.	1,500			4	10	0
After the third removal				Half rates		

All rates calculated on nett register tonnage.

A Wheat Loading Wharf.

COMMONWEALTH HARBOUR AND LIGHT RATES.

9d. per ton, payable quarterly. Chargeable at first port of call.

MOORING LICENSES.

Licenses to put down, place or continue moorings are issued by the Harbour Trust Commissioners upon payment of the following fees:—

Class 1.—Mooring, being the property of and intended for use of an oversea, interstate, or state shipping company, £5 per annum;

Class 2.—Mooring intended for use in connection with business carried on at docking premises, 10s. per annum;

Class 3.—Mooring for a vessel 100 feet in length and upwards, and not covered by Class 1 or 2, 10s. per annum;

Class 4.—Mooring for a vessel 50 feet and under 100 feet in length, 7s. 6d. per annum;

Class 5.—Mooring for a vessel 30 feet and under 50 feet in length, 5s. per annum;

Class 6.—Mooring for a vessel under 30 feet in length, 2s. 6d. per annum.

WHEAT TRAFFIC AND CHARGES.

Arrangements for the conveyance of wheat to Darling Island for shipment are in the hands of the Railway Commissioners.

The sheds are as far as possible leased in sections or as a whole for the full period, but the charges for storing wheat and flour in the unleased portions of the main grain shed at Darling Island during the period from 1st December to 30th November following, and in the small grain shed in Pyrmont Bay from 1st December to 31st August following, in each season are:—6d. per ton for the first week, or part thereof; 5d. per ton for the second week, or part thereof; and 4d. per ton for every additional week, or portion of a week; which charges include the use of the electric elevators and conveyors. 4d. per ton is charged for the use of the electric elevators and conveyors when wheat or flour is unloaded direct from trucks to vessels on account of persons who have not leased spaces in the grain sheds.

During the period from 1st September to 30th November, inclusive, in the case of the small grain shed in Pyrmont Bay, a charge of 6d. per ton (or part thereof) is made for the use of the electric elevators and conveyors.

The charge for the storage of wheat and flour outside the grain sheds is 3d. per ton per week (or part thereof); and if subsequently loaded into trucks and taken to the elevators and conveyors for shipment, a further charge of 2s. 6d. per four-wheeled truck is made.

These arrangements, however, will cease to operate when the bulk handling scheme is complete, and the wharfage now occupied by wheat ships will be available as discharging berths for general cargo.

SWINGING SHIPS.

The Harbour Trust Commissioners maintain a buoy in Berry's Bay for the use of vessels swinging for compass adjustment. A charge is not made for this service.

Licensed surveyor's rates for swinging ships are as follow:

For vessels under 500 tons register	£2 0 0
For vessels over 500 and under 750 tons register	£2 10 0
For vessels over 750 tons register	£3 0 0

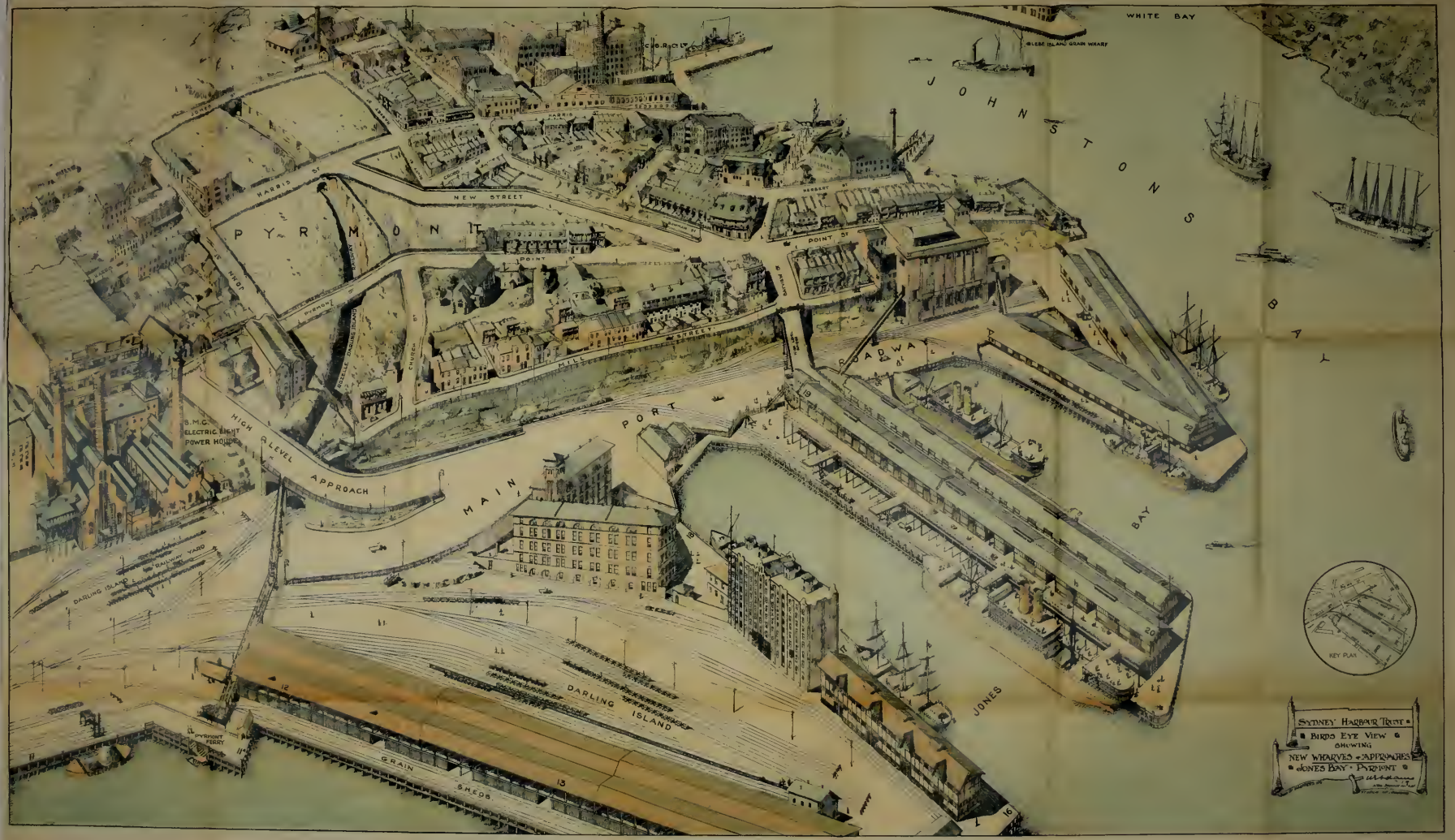
LIGHTS CONNECTED WITH THE NAVIGATION OF THE PORT.

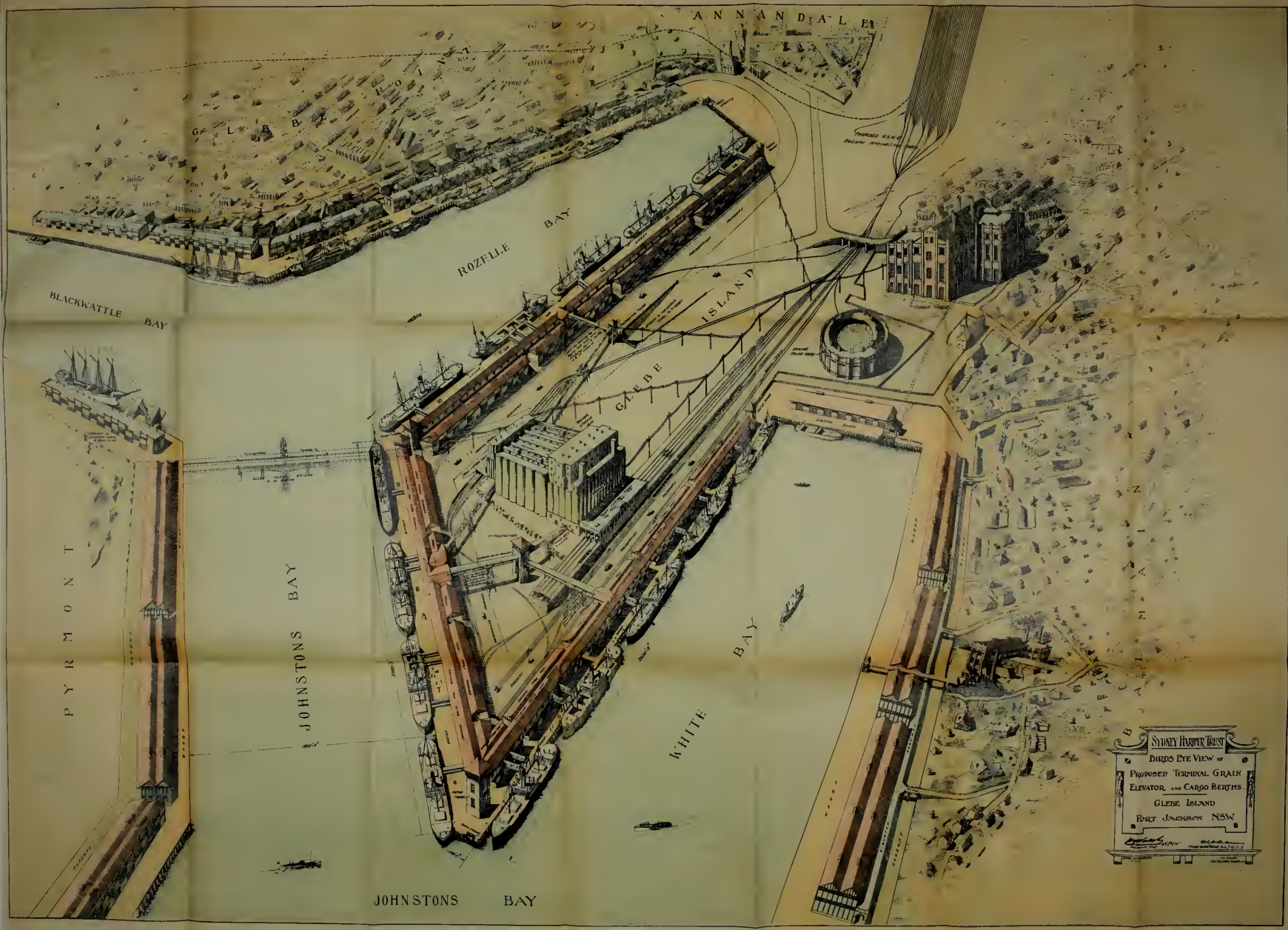
Name.	Year.	Position.	No. and colour of Lights.	Character and Period.	Height in Feet.	Miles visible.	Character of Apparatus.	Description of Building.	Remarks. All bearings given from 0° to 360°
Port entrance	1911	Grotto Point	White with red and green sectors	Fixed	61¼	6	Acetylene Gas Dioptric	White Tower	Visible only between 303° to 267°, Red between 303° and 293°, White between 293° and 277° and Green between 277° and 267°.
Leading Sector light	1911	On high land South of Spit	Red	Fixed	142	6	Acetylene Gas Condenser	White Tower	Leading light 285°. Entrance to Port Jackson.
Eastern Channel Buoy	1911	In five fathoms off Lady Bay	Red	Flashing	16	5	Acetylene Gas Dioptric	Black Buoy	Period of light 1 second, Eclipse 2 seconds.
Eastern Channel Leading Lights	1891	One on foreshore Vaucluse, one on high land inshore	Two Red	Fixed	52¼ and 275	5	Coal Gas Catoptric	White Towers	Leading lights 176°, light in foreshore tower screened to cut on bearing 133°, clearing Bottle and Glass Rocks.
Sow and Pigs Rocks	1912	In 21ft. of water N.W. edge of Shoal	White	Flashing	22	5	Acetylene Gas Dioptrie	Black Buoy	Period of light 1 second, Eclipse 2 seconds.
East'n Channel Pile Beacon	1908	S.E. edge of Shoal	Green	Fixed	31¼	5	Acetylene Gas Dioptric	Tower on Piles	Visible 360°
Western Channel Buoy	1911	In 37½ft., 1350ft. off George's Head	Red	Flashing	16	5	Acetylene Gas Dioptric	Black Buoy	Period of light 1 second, Eclipse 2 seconds.
Shark Bay Buoy	1911	In 5 fathoms between Shark Pt. and Vaucluse Pt.	White	Flashing	16	5	Acetylene Gas Dioptric	Black Buoy	Period of light 1 second, Eclipse 2 seconds.

Lights Connected with the Navigation of the Port.—*Continued.*

Name.	Year.	Position.	No. and colour of Lights.	Character and Period.	Height in Feet.	Miles visible.	Character of Apparatus.	Description of Building.	Remarks. All bearings given from 0° to 360°
Shark Island	1912	In 11½ft. of water off N.W. of Island	White	Fixed	40½	6	Acetylene Gas Dioptric	White Tower	Visible in fairway from Shark Point to Point Piper.
Bradley's Head	1906	20yds. from extreme	White Fog bell	Fixed	22	5	Acetylene Gas Dioptric	White Tower	Bell sounding continuously during fog.
Robertson's Point	1910	10yds. from extreme	White	Fixed	28	5	Coal Gas Dioptric Lantern	White Tower	
Kirribilli Point	1917	Off Point	Green	Fixed	11½	3	Electric Glow	Pile Beacon	
Fort Denison	1908	On Tower of Fort N. end of Island	Red Fog bell	Fixed	61	5	Acetylene Gas Dioptric	White Tower	Visible all round, shows white between 356° and 4°, fogbell sounding continuously during fog.
Benelong Point	1917	Off Point	Red	Fixed	12	3	Electric Glow	Pile Beacon	
Sydney Cove	1904	On reef W. side of entrance	Red	Fixed	14	3	Electric Glow	Pile Beacon	Fogbell on end of Horse ferry wharf sounding continuously during fog.
Dawes Point	1906	N. end of wharf	Red	Fixed	39½	3	Electric Arc	On N.W. corner of shed	
Miller's Point	1904	N.W. corner of wharf	White with Red Sector	Fixed	69	4	Electric Arc	Steel Tower	Red from 227° to Dawes Point, white elsewhere.
Goat Island	1905	N.E. end of Island, 55yards. apart	Two Green	Fixed	12 and 32	4	Acetylene Gas Condenser	Pole and Pile Beacon	Leading 271° 55yds. apart Day marks: black square and white diamond.

MILLERS POINT.
DALGETY ROAD
TO MILLERS PT
TO KENT ST. VIA ARGYLE ST. BRIDGE - TRAM LINE.
TOWNS PLACE
HICKSON RD
TO MINCHILL ST
NEW PORTINGER ST
WALSH BAY
DAWES POINT
HICKSON ROAD
TO DAWES PT.
TO THE LEVEL ROAD
HICKSON Rd
TO CIRCULAR QUAY
DAWES POINT RESERVE
SYDNEY HARBOUR TRUST.
BIRDS EYE VIEW
SHOWING NEW WHARFAGE SCHEME
IN COURSE OF CONSTRUCTION
WALSH BAY. SYDNEY.


WHITE BAY
GLEBE ISLAND GRAIN WHARF
JOHNSTONS BAY
PYRMONT
NEW STREET
HARRIS ST
POINT ST
PYRMONT POINT
HERBERT ST
MILL ST
BROADWAY
HIGH LEVEL APPROACH
MAIN PORT
JONES BAY
DARLING ISLAND
DARLING ISLAND GOODS YARD
GRAIN SHEDS
PYRMONT FERRY
S.M.C. ELECTRIC LIGHT & POWER HOUSE
KEY PLAN
SYDNEY HARBOUR TRUST
BIRDS EYE VIEW
SHEWING
NEW WHARVES & APPROACHES
JONES BAY · PYRMONT


ANNANDALE
GLEBE POINT
ROZELLE BAY
BLACKWATTLE BAY
GLEBE ISLAND
PYRMONT
JOHNSTONS BAY
WHITE BAY
JOHNSTONS BAY
SYDNEY HARBOUR TRUST
BIRDS EYE VIEW OF
PROPOSED TERMINAL GRAIN
ELEVATOR AND CARGO BERTHS.
GLEBE ISLAND
PORT JACKSON N.S.W.

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